State of California The Resources Agency DEPARTMENT OF WATER RESOURCES

DIVISION OF FLOOD MANAGEMENT



2004 PROJECT STRUCTURE REPORT

INSPECTION OF FLOOD CONTROL STRUCTURES ON THE SACRAMENTO AND SAN JOAQUIN RIVERS AND THEIR TRIBUTARIES

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INTRODUCTION

The flood control system of the Sacramento and San Joaquin Valleys depends on the levee system and the many structures built on the tributaries and bypasses. These structures are fixed crest diversion weirs, controllable diversion structures, outfall structures, drop structures, and interior drainage pumping plants. This report reviews the maintenance of these structures.

History of Report

The maintenance effort expended on these structures has been the subject of an annual report dating back to 1959. A report entitled, "Location, Description and Inventory of Miscellaneous Project Structures, Sacramento River Flood Control Project, and American River Flood Control Project", was issued and was followed shortly thereafter by a maintenance status report. Maintenance status reports on flood control structures have since been made on an annual basis.

Responsibility for Maintenance

The flood control structures included herein were, in general, constructed as an integral part of the flood control project, by the U.S. Army Corps of Engineers and the State of California. Operation and Maintenance manuals were issued by the constructing authority to the maintaining agency. Maintaining agencies agreed to be responsible for the maintenance of the project structures. The State of California makes periodic inspections of the quality of the maintenance performed by the maintaining agencies and reports its findings to those agencies. These inspections are made on behalf of The Reclamation Board by the Division of Flood Management, Flood Operations Branch, Flood Project Inspection Section.

The purpose of the inspection is to identify and report to the constructing authority and the maintaining agency any condition that may diminish the ability of the structure to perform its intended function.

CHAPTER I

FLOOD CONTROL STRUCTURES INSPECTED ON THE SACRAMENTO RIVER AND TRIBUTARIES

2004

DIVERSION STREET SILE
MAINTAINED BY PLUMAS COUNTY

Condition of concrete diversion structure.

- 2. Condition of the gauging house and equipment.a. Fair. There are still numerous bullet holes in the door.
- 3. Condition of the steel trash racks.

Good.

a. Good.

1.

a.

- 4. Condition of debris deflection structure.
 - a. Good.
- 5. Condition of the revetments.
 - a. Good.
- 6. Accumulation of trash and debris around structure or in the channel.
 - a. Minimal amount of debris around the deflection structure.
- 7. Vegetation around the structure or in the channel.
 - a. None.
- 8. Condition of the conduits.
 - a. The center conduit was inspected this year and found to be in good condition. However the separations at the joints between the monoliths have increased.

- 9. Condition of the discharge structure.
 - a. The structure is in good condition.
- 10. Comments:
 - a. Good maintenance.

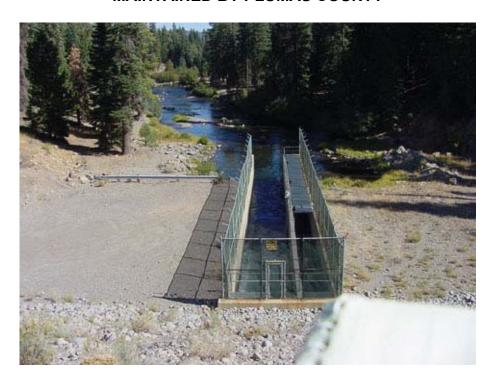
NOTE: Routinely, one of the three diversion structure conduits is jointly inspected each year with the Corps of Engineers and Plumas county.



The upstream side of the diversion structure at the inlet.



The boom and inlet from the top of the dam.



The outlet works from the top of the dam.



The gauging house door is severely damaged, resulting in no access.

NORTH FORK FEATHER RIVER DIVERSION CHANNEL DROP STRUCTURES 1 through 7

Maintained by Plumas County

1. Condition of grouted rock	revetment drop structures.
------------------------------	----------------------------

- a. Good.
- 2. Condition of channel banks upstream and downstream of the drop structures.
 - a. Good.
- 3. Accumulation of trash and debris around the structures or in the channel.
 - a. Minimal.
- 4. Vegetation around the structures, the channel banks or in the channel.
 - a. Minimal.
- 5. Comments:
 - a. Good maintenance.

NORTH FORT FEATHER RIVER DIVERSION CHANNEL DROP STRUCTURES 1 through 7

Maintained by Plumas County



View of Drop Structure No. 1 from the left bank. Typical of all drop structures.



North from the Hwy 36 bridge at drop structures 3 through 7.

CLOVER CREEK DIVERSION STRUCTURE

Maintained by Lake County Flood Control and Water Conservation District

- 1. Condition of concrete weir structure.
 - a. Good.
- 2. Condition of the diversion structure and wing walls.
 - a. Good.
- 3. Condition of the bulkhead.
 - a. Good.
- 4. Condition of the control gates and mechanism.
 - a. Good.
- 5. Accumulation of trash and debris around the structures or in the channel.
 - a. Most of the gravel has been removed from the outlet pipes, but has accumulated within 5 feet of the outlet pipes, thus the water could not flow correctly as designed.
 - b. Some gravel and rock needs to be removed on the upstream side.
- 6. Vegetation around the structures or in the channel.
 - a. A lot of vegetation upstream from the gates needs to be cleared.
 - b. There is dense vegetation in the creek channel, 30 feet downstream of the structure.
- 7. Comments:
 - a. Remove accumulated rock, dirt, boulders and gravel upstream of weir.
 - b. Good maintenance.

CLOVER CREEK DIVERSION STRUCTURE Maintained by Lake County Flood Control and Water Conservation District



The Clover Creek Diversion structure on the left bank.



Diversion structure outlet to Clover Creek.

CLOVER CREEK DIVERSION STRUCTURE Maintained by Lake County Flood Control and Water Conservation District



Pile of rocks on upstream left bank to be removed.



Growth on upstream side.

MIDDLE CREEK PUMPING PLANT

Maintained by State of California **Sutter Maintenance Yard**

1.	Condition of main pump structure and switchboard nouse.

Poor. The separation between the top of the surge box and the structure a.

		appears to have an eight and one half inch side displacement. The surge box has settled twelve inches since 1962 and is 7.6 feet below the top of the structure. There is approximately a two inch deflection. There have been no changes since last reported.
2.	Cond	dition of pumps and motors.
	a.	Good.

a. Good.

Condition of electrical equipment.

4. Condition of control gates, mechanisms, and flap gates.

> a. Good.

3.

5. Condition of the trash racks.

> Good. a.

Condition of log boom. 6.

> a. Good.

Condition of hydrographic facilities. 7.

> Good. a.

8. Accumulation of trash or debris in the sump.

> None. a.

9. Vegetation in sump.

> Minimal. a.

10. Comments:

DWR's Sutter Maintenance Yard performs routine maintenance year round a. and tests the equipment prior to each flood season.

MIDDLE CREEK PUMPING PLANT

Maintained by State of California Sutter Maintenance Yard



Upstream at the breather pipe and screw gate mechanism.



Upstream at the intake side of the pumping plant.

HIGHLAND CANAL DIVERSION WEIR AND DRAINAGE STRUCTURE

Maintained by State of California Sutter Maintenance Yard

- 1. Condition of concrete weir structure and stilling basin.
 - a. Good.
- 2. Condition of drainage structure.
 - a. Good.
- 3. Condition of the concrete abutments and wing walls.
 - a. There is a displacement between both wing walls and the structure,
 2 inches on left wing wall and 2½ inches on the right wing wall.
 Displacement has been stable for at least 6 years.
- 4. Condition of the revetment.
 - a. Good.
- 5. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 6. Vegetation around the structure or in the channel.
 - a. A lot of tule growth and tall grass on south side of abutment.
- 7. Comments:
 - a. Good maintenance

HIGHLAND CANAL DIVERSION WEIR AND DRAINAGE STRUCTURE

Maintained by State of California Sutter Maintenance Yard



The concrete weir and diversion pipe intake.



The oulet channel for the diversion pipes.

BIG CHICO CREEK DIVERSION STRUCTURE Maintained by Butte County

Condition of concrete control structure.

1.

	a.	Good.
2.	Con	dition of bulkheads.
	a.	Good.
3.	Con	dition of gate controls and mechanisms.
	a.	Butte county will test gates prior to flood season.
4.	Con	dition of revetment.
	a.	Good.
5.	Acc	umulation of trash and debris around the structure in the channel.
	a.	None.
6.	Veg	etation around structure and in the channel.
	a.	None.
7.	Com	nments:
	a.	Contact DWR inspector prior to gate test.
	b.	Good maintenance.

BIG CHICO CREEK DIVERSION STRUCTURE Maintained by Butte County



Upstream at inlet end of structure.



Downstream at discharge end of structure from the right bank.

LINDO CHANNEL DIVERSION WEIR

Maintained by Butte County

 Condition of concrete weir structure and stilling basin, and velocity dissipaters.
--

- a. There are minor joint separations on the north and south ends of the weir where it contacts the abutments.
- b. There is minor damage to a few velocity dissipaters.
- 2. Condition of concrete abutments and wing walls.
 - a. Good.
- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around structure or in the channel.
 - a. None.
- 6. Condition of gauging house and equipment.
 - a. Poor.
- 7. Comments:
 - a. Repair or replace the gauging house.
 - b. Fair maintenance.

LINDO CHANNEL DIVERSION WEIR Maintained by Butte County



Upstream side of the structure from the left bank.



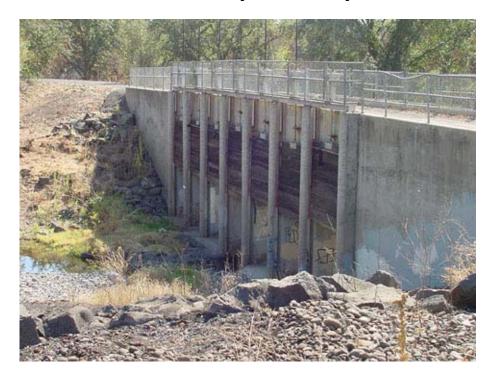
The velocity dissipaters on the downstream side of structure from the left bank.

LINDO CHANNEL CONTROL STRUCTURE

Maintained by Butte County

- 1. Conditions of concrete control structure.
 - a. Good.
- 2. Condition of bulkheads.
 - a. There is a $\frac{1}{2}$ inch separation in the joint between the south end bulkhead and the structure. This joint separation is stable.
- 3. Condition of control gates and mechanisms.
 - a. Good.
- 4. Condition of revetment.
 - a. Poor. The downstream rock and gunite skirt is severely damaged, seems to be stable.
- 5. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 6. Vegetation around the control structure or in the channel.
 - a. None.
- 7. Comments:
 - a. Butte County will test the control gates prior to flood season.
 - b. Repair the rock and gunite skirt downstream of structure.
 - c. Fair maintenance.

LINDO CHANNEL CONTROL STRUCTURE Maintained by Butte County



Upstream at intake side of structure.



Downstream at discharge side of structure.

Maintained by State of California Sutter Maintenance Yard

- 1. Condition of concrete control structure.
 - a. Fair. The base at the downstream side of the control structure is beginning to undermine.
- 2. Condition of bulkheads and wing walls of the control structure.
 - a. Previously reported separations and displacements are stable.
- 3. Condition of concrete weir, stilling basin, and velocity dissipaters.
 - a. Minor cracks in the weir and minor spalling of concrete on the weir invert.
- 4. Condition of concrete bulkheads of the weir.
 - a. Good.
- 5. Condition of bulkheads and fill between the control structure and the weir.
 - a. Good.
- 6. Condition of the revetments.
 - a. Poor. The revetment/gunite apron on the downstream end of the control structure is severely damaged.
- 7. Condition of the gauging station and equipment.
 - a. Good.
- 9. Accumulation of trash and debris around the structures or in the channel.
 - a. None.
- 10. Vegetation around the control structure, the weir, or in the channel.
 - a. Mininmal.

Maintained by State of California Sutter Maintenance Yard

11. Comments:

- a. Repair the control structure base (downstream side) as soon as possible.
- b. Continue to monitor joint separation between the control structure and the abutments and repair as needed.
- c. Remove driftwood and cobbles from dissipaters.
- d. Remove small trees in front of dissipaters.
- e. Fair maintenance.

Maintained by State of California Sutter Maintenance Yard



View of the upstream side of the control structure and weir.



The upstream side of the control structure.

Maintained by State of California Sutter Maintenance Yard



The downstream side of the control structure.

Repairs have not been made to prevent undermining of the structure.



The weir and velocity dissipaters.

MOULTON WEIR

Maintained by State of California Sutter Maintenance Yard

Condition of concrete weir structure and stilling basin.

Condition of concrete abutment and wing walls.

1.

2.

a.

Good.

	a.	Good.
3.	Cond	lition of revetments.
	a.	Good.
4.	Accu	mulation of trash and debris around structure or in the channel.
	a.	None.
5.	Vege	tation around the structure or in the channel.
	a.	None.
6.	Cond	lition of gauging house and equipment.
	a.	Good.
7.	Com	ments:
	a.	Good maintenance.
	b.	Rodent problem needs to be repaired.

MOULTON WEIR Maintained by State of California Sutter Maintenance Yard



The weir and stilling basin from the top of abutment.



Gauging house and equipment.

COLUSA WEIR

Maintained by State of California Sutter Maintenance Yard

1.	Condition of concrete weir structure and stilling basin. (Note: Bridge across bypass is not part of the weir structure)	
	a.	Good.
2.	Cond	ition of concrete abutment and wing walls.
	a.	Good.
3.	Cond	ition of revetment.
	a.	Good.
4.	Accui	mulation of trash and debris around the structure or in the channel.
	a.	None.
5.	Veget	ation around the structure or in the channel.
	a.	None.
6.	Cond	ition of gauging house and equipment.
	a.	Good.
7.	Comn	nents:
	a.	Good.

COLUSA WEIR Maintained by State of California Sutter Maintenance Yard



The upstream side of weir from the north levee.



Gauging house and equipment.

TISDALE WEIR

Maintained by State of California Sutter Maintenance Yard

1.	Condition of concrete weir structure and stilling basin.
	(Note: Bridge across bypass is not part of the weir structure)

- a. Good.
- 2. Condition of concrete abutment and wing wall.
 - a. Good.
- 3. Condition of revetments.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around structure or in the channel.
 - a. Minimal.
- 6. Condition of gauging house and equipment.
 - a. Good.
- 7. Comments:
 - a. Tighten or replace north hand railing.
 - b. Good Maintenance.

TISDALE WEIR Maintained by State of California Sutter Maintenance Yard



Downstream side of the weir from the north end.



Upstream side of the weir from the south end.

BUTTE SLOUGH OUTFALL STRUCTURE

1	. (Condition	of	wal	kway	and	supports	> .
---	-----	-----------	----	-----	------	-----	----------	---------------

- a. Good.
- 2. Condition of pipes.
 - a. Visual inspection impractical.
- 3. Condition of the control gates, mechanisms and flap gates.
 - a. Visual inspection impractical.
- 4. Condition of log boom.
 - a. The log boom was present at the time of the inspection.
 - b. Trash, tree limbs etc. caught under log boom.
- 5. Condition of gauging house and equipment.
 - a. Good.
- 6. Condition of revetment.
 - a. Good.
- 7. Accumulation of trash and debris around the structure or in the channel.
 - a. Minimal. Logs need to be removed.
- 8. Comments:
 - a. Sutter Maintenance Yard reports that all equipment is in good working order.
 - b. Good Maintenance.

BUTTE SLOUGH OUTFALL STRUCTURE



The intake side of the structure.



Upstream at log boom.

BUTTE SLOUGH DRAINAGE STRUCTURE

- 1. Condition of the corrugated metal pipe (CMP) drainage structure.
 - a. Good.
- 2. Condition of the control gate, mechanisms, and flap gates.
 - a. Could not properly inspect due to excessive vegetation.
- 3. Condition of the revetment.
 - a. Visual inspection was limited due to vegetation.
- 4. Accumulation of trash and debris around the inlet, in the pipe or in the channel.
 - a. Minimal.
- 5. Vegetation around the structure or in the channel.
 - a. The vegetation immediately around the in-take has been cleared. Growth is so dense that discharge ends of structure cannot be seen.
- 6. Comments:
 - a. Remove vegetation from discharge ends of structure. If growth is not removed, the drainage structure could become non-functional.
 - b. Some maintenance.
 - c. This structure is rated poor.

BUTTE SLOUGH DRAINAGE STRUCTURE



CMP stand pipe in the center.



The Sacramento River in the general direction of the outlet. The outlet would be on the left bank (foreground).

Maintained by State of California Sutter Maintenance Yard

Condition of the main pump structure.

1.

C.

d.

Good maintenance.

	a.	Good.			
2.	Condition of abutments and wing walls.				
	a.	Good.			
3.	Condition of pumps and motors.				
	a.	Good.			
4.	Cond	lition of control gates, mechanisms, and flap gate.			
	a.	Good.			
5.	Cond	lition of electrical equipment.			
	a.	Good.			
6.	Condition of trash rack.				
	a.	Good.			
7.	Cond	lition of revetment.			
	a.	Good.			
8.	Accu	mulation of trash and debris in the sump.			
	a.	None.			
9.	Vegetation in the inlet channel.				
	a.	None.			
10.	Comi	ments:			
	a.	Tests of pumps, motors and electrical equipment are conducted in October each year.			
	b.	Railing in front of pump gates and on the south side is not locked down, very loose or is missing bolts.			

Cover exposed electrical wire on south side of wall.

40



The intake side of the pumping plant. Pump numbers were inserted onto picture.



The discharge side of the pumping plant.



Railing not locked down, could be easily removed.



Electrical wire exposed.

Maintained by State of California Sutter Maintenance Yard

Condition of main pump structure.

Condition of pumps and motors.

Condition of abutments and wing walls.

Water is undercutting the south wing wall.

Good.

Good.

1.

2.

3.

a.

a.

a.

4.	Condition of control gates, mechanisms, and flap gates.		
	a.	Good.	
5.	Con	dition of electrical equipment.	
	a.	Good.	
6.	Con	dition of the trash racks.	
	a.	Good.	
7.	Con	dition of revetment.	
	a.	Good.	
8.	Accumulation of trash or debris in the sump.		
	a.	Pump No. 3 has trash and debris in it.	
9.	Vege	etation in the inlet channel.	
	a.	Minimal.	

Maintained by State of California Sutter Maintenance Yard

10. Comments:

- a. Tests of the pumps, motors, and electrical equipment are conducted in October each year.
- b. Repair bank erosion on south wing wall, undercutting the wall.
- c. Repair dirt sinking at end of south wall on top, exposing concrete.
- d. Cover the exposed wire.
- e. Remove plant growth and debris in pump No. 3.
- f. Good maintenance.



The pumping plant, sump and trash racks from the intake side.

Pump numbers were inserted onto picture.



The discharge side of the pumping plant.



Erosion on south wing wall, undercutting the wall.



Electrical wire exposed.

Maintained by State of California Sutter Maintenance Yard



Dirt sinking at end of south wall on top, exposing concrete.

Maintained by State of California Sutter Maintenance Yard

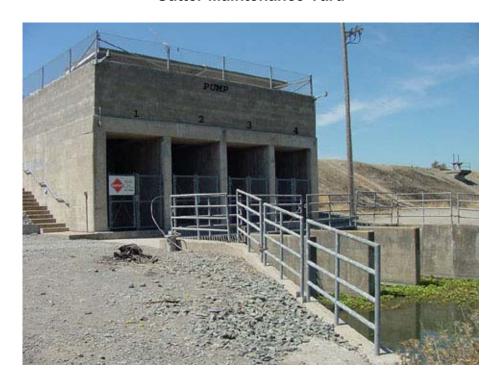
Condition of main pump structure.

Good maintenance.

C.

1.

	a.	Good.			
2.	Condition of abutments and wing walls.				
	a.	Good.			
3.	Cond	ition of pumps and motors.			
	a.	Good.			
4.	Cond	ition of control gate, mechanisms and flap gate.			
	a.	Good.			
5.	Cond	ition of electrical equipment.			
	a.	Good.			
6.	Cond	ition of the trash racks.			
	a.	Good.			
7.	Accu	mulation of trash or debris in the sump.			
	a.	None.			
8.	8. Vegetation in the inlet channel.				
	a.	Minimal.			
9.	Comr	ments:			
	a.	Tests of the pumps, motors and electrical equipment are conducted in October each year.			
	b.	Railing north side at the end needs to be locked or bolted down.			



The inlet side of the pumping plant. Pump numbers were inserted onto picture.



The discharge side of the pumping plant.

WADSWORTH CANAL WEIR NO.4

Maintained by State of California Sutter Maintenance Yard

	a.	Good.		
2.	Condition of concrete abutments.			
	a.	Good.		
3.	Accu	mulation of trash and debris around the structure or in the channel.		
	a.	None.		
4.	Veget	ation around structure or in the channel.		
	a.	None.		
5.	Comr	nents:		

Condition of concrete weir structure.

Good maintenance.

a.

1.

WADSWORTH CANAL WEIR NO.4



Upstream side of structure from the left bank levee.



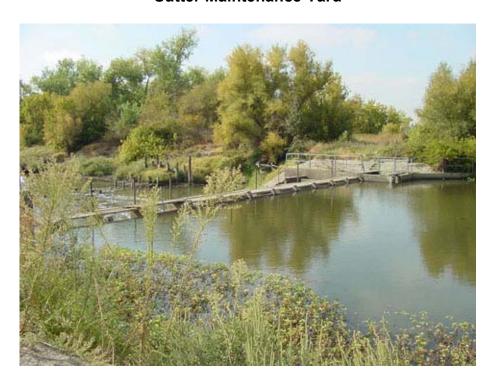
Downstream side of structure from the left bank levee.

SUTTER BYPASS WEIR NO. 2

1. Condition of concrete weir structure.
--

- a. Good.
- 2. Condition of concrete abutments.
 - a. Good.
- 3. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 4. Vegetation around structure or in the channel.
 - a. None.
- 5. Comments:
 - a. Railing need to be reinstalled.
 - b. Boards need to reinstalled.
 - c. Good maintenance.

SUTTER BYPASS WEIR NO. 2 Maintained by State of California Sutter Maintenance Yard



Upstream side of the structure.



Downstream side of the structure.

NELSON BEND ROCK QUARRY WEIR

- 1. Condition of quarry rock weir section.
 - a. Good.
- 2. Condition of revetments.
 - a. Good.
- 3. Accumulation of trash and debris around structure or in the channel.
 - a. Areas of debris exist along the weir and in the channel.
- 4. Vegetation around structure or in the channel.
 - a. Vegetation is very heavy, with trees, brush and berries on the weir section and in the rock revetments.
- 5. Comments:
 - a. No clearing done since 1985. The vegetation is extremely dense and could impair the functioning of the weir.
 - b. Poor maintenance.
 - c. An unauthorized barricade has been installed at each end of Nelson Bend rock weir.

NELSON BEND ROCK QUARRY WEIR



Southwest at the growth and debris on the rock weir.



Northeast from the southwest end of the weir.

- 1. Condition of outfall structure.
 - a. Good.
- 2. Condition of bulkheads.
 - a. Fair. The large vertical crack and displacement on the downstream side, left bank, has not changed in several years. The crack is not accessible for measurement, but the overall width is estimated to be 1 inch.
 - b. The concrete construction joint between the left bulkhead and the outfall structure, upstream side, passes water when the Sacramento River is at high stage. Passage of water was first noticed in 1980.
 - c. Horizontal crack on the upstream left bulkhead.
- 3. Condition of the pipes.
 - a. Good.
- 4. Condition of the control gates, mechanisms, and flap gates.
 - a. Good. Were open and working.
- 5. Condition of electrical equipment.
 - a. Good.
- 6. Condition of the gauging house and equipment.
 - a. Good.
- 7. Condition of the log boom.
 - a. Good.
- 8. Condition of fill from bulkheads to levee.
 - a. Good.

Maintained by State of California Sacramento Maintenance Yard

- 9. Accumulation of trash and debris around the structure or in the channel.
 - a. Minimal.

10. Comments:

- a. Structure is inspected and maintained daily.
- b. The seepage through the structure should be monitored during high water stages.
- c. Sacramento Maintenance Facility performs a yearly pre-season inspection of the structure and its components.
- d. Clear vegetation on and around log boom.
- e. Good maintenance.



Upstream side of structure from the left bank.



Downstream side of the structure from the left bank.



There is a vertical crack and displacement on the downstream side of structure.



Horizontal crack on the upstream left bulkhead.

FREMONT WEIR

- 1. Condition of concrete weir and stilling basin.
 - a. Some cracks and spalling exist on the weir and in the stilling basin as previously reported.
- 2. Condition of concrete abutment.
 - a. Good.
 - b. The crack on the downstream side of the right (west) abutment, and the two cracks on the right abutment at Rattlesnake Island, have not enlarged.
 - c. North abutment has large cracks on east side.
- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. Minimal.
- 5. Vegetation around the structure or in the channel.
 - a. Minimal.
 - b. Minimal.
- 6. Condition of gauging house and equipment.
 - a. Good.
- 7. Comments:
 - a. Monitor the cracks and spalling and repair as needed.
 - b. Remove debris from the stilling basin prior to flood season.
 - c. Good maintenance.



Northwest at the weir and stilling basin from the north abutment.



North from the southern abutment.

CACHE CREEK SETTLING BASIN WEIR AND DRAINAGE STRUCTURE

1.	Condition of	concrete v	veir structure	and stilling basin.	

- a. Good.
- 2. Condition of drainage structure.
 - a. Good.
- 3. Condition of concrete abutments and wing walls.
 - a. Good.
- 4. Condition of revetment.
 - a. Good.
- 5. Accumulation of trash and debris around the structures or in the channels.
 - a. Minimal debris around the drainage structure.
- 6. Vegetation around the structures or in the channel.
 - a. None.
- 7. Comments:
 - a. Remove the accumulated debris around the drainage structure.
 - b. Good maintenance.

CACHE CREEK SETTLING BASIN WEIR AND DRAINAGE STRUCTURE



East at the weir and stilling basin. The weir spills into the Yolo Bypass.



View of the drainage structure located in the southwest corner of the Cache Creek Settling Basin.

CACHE CREEK SETTLING BASIN WEIR AND DRAINAGE STRUCTURE



West at the outlet drainage structure.

SACRAMENTO WEIR

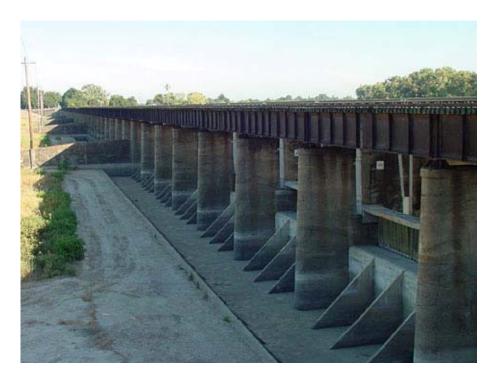
Maintained by State of California Sacramento Maintenance Yard

Condition of concrete weir section and stilling basin.

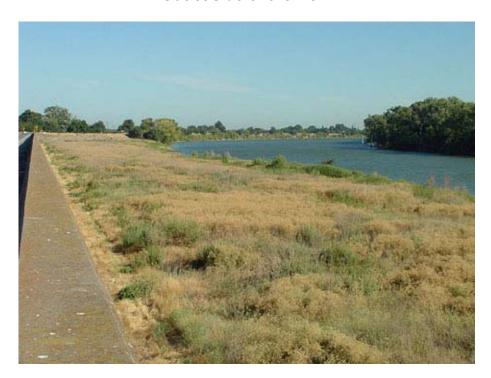
1.

	a.	Good.	
2.	Cond	ition of concrete bulkheads.	
	a.	Good.	
3.	Cond	ition of the needle boards, batting and boots (hinges).	
	a.	Good.	
4.	Cond	ition of tripping mechanisms.	
	a.	Good.	
5.		Condition of the metal stop logs, cables and clamps used to retain the needle boards.	
	a.	Good.	
6.	Accu	mulation of trash and debris around the structure or in the channel.	
	a.	None.	
7.	Veget	ation around the structure or in the channel.	
	a.	Minor Vegetation.	
8.	Comr	ments:	
	а	Good maintenance	

SACRAMENTO WEIR Maintained by State of California Sacramento Maintenance Yard



Outlet side of the weir.



Inlet side of the weir.

MAGPIE CREEK PUMPING PLANT

Maintained by City of Sacramento

2.	Condition of abutment and wing walls.			
	a.	Good.		
3.	Condition of the pumps and motors.			
	a.	Good.		
4.	Cond	ition of control gates, mechanisms, and flap gates.		
	a.	Good.		
5.	Cond	ition of the electrical equipment.		
	a.	Good.		
6. Condition of the trash racks.		ition of the trash racks.		
	a.	Good.		
7.	Accu	mulation of trash debris in the sump or in the channel.		
	a.	None.		
8.	Vege	tation in the sump or in the inlet channel.		
	a.	None.		
9. Comments:		ments:		
	a.	Good maintenance.		
	b.	There is a weekly, monthly and an annual inspections.		
	C.	Replace flap gate.		

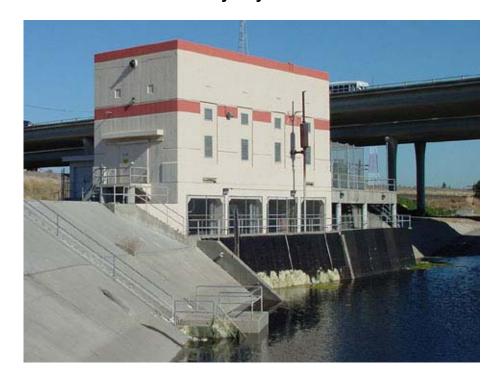
1.

a.

Condition of main pump structure.

Good.

MAGPIE CREEK PUMPING PLANT Maintained by City of Sacramento



Pumping plant, sump, and trash racks at inlet side on the landward side from the left bank levee of the Natomas East Main Drain.



Discharge end of structure on the water ward side from the left bank levee of the Natomas East Side Drain.

Maintained by Sacramento County as Howe Avenue Storm Drain D - 05

Condition of the main pump structure.

Condition of abutments and wing walls.

Condition of gate controls, mechanisms and flap gates.

Condition of pumps and motors.

Good.

Good.

Good.

1.

2.

3.

4.

a.

a.

a.

	a.	Good.			
5.	Condition of electrical equipment.				
	a.	Good.			
6.	Cond	lition of the trash racks.			
	a.	Good.			
7.	Accu	mulation of trash and debris in the sump or around the structure.			
	a.	None.			
8.	Vege	tation in the sump or in the inlet channel.			
	a.	None.			
9.	Comments:				
	 Inspection and tests of all systems are conducted yearly. Annual maintenance on system done in June and July. 				
	b.	Remove K-Rail from the inlet on landward side of the right bank levee.			
	C.	Outstanding maintenance.			

Maintained by Sacramento County as Howe Avenue Storm Drain D - 05



Pumping plant, sump and trash racks at inlet on the landward side of the right bank levee of the American River.



Gate controls and gates at the discharge side of the pumping plant.

Maintained by Sacramento County as Willhaggin Storm Drain D – 43

Condition of the main pump structure.

Condition of abutments and wing walls.

Good.

1.

2.

a.

	a.	There is a 3% inch deflection in the retaining wall next to the stairway on the west side of structure.		
3.	Cond	lition of pumps and motors.		
	a.	Good.		
4.	Cond	lition of control gates, mechanisms, and flap gates.		
	a.	Good.		
5.	Cond	lition of electrical equipment.		
	a.	Good.		
6.	Cond	lition of trash racks.		
	a.	Good.		
7.	Accumulation of trash and debris in the upper and lower sumps.			
	a.	None.		
8.	Vegetation in the upper and lower sumps.			
	a.	None.		
9.	Com	ments:		
	a.	Inspections and tests of all systems are conducted yearly. All maintenance done in September and October.		
	b.	There has been no measurable change in the 3% inch deflection in the		

western retaining wall since last reported in 1998.

Outstanding maintenance.

C.

Maintained by Sacramento County as Willhaggin Storm Drain D – 43



Trash racks on the intake side of the pumping plant.



Gate controls and flap gates on the discharge side of the pumping plant.

Maintained by Sacramento County as Willhaggin Storm Drain D – 43



Three and five eighth inch deflection in the west retaining wall.

ELK SLOUGH INLET STRUCTURE

Maintained by Reclamation District No. 999

1. C	Condition of	f inlet structure.
------	--------------	--------------------

- a. Good.
- 2. Condition of control gate mechanism.
 - a. Good.
- 3. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 4. Vegetation around the structure.
 - a. Minor growth around outlet.
- 5. Comments:
 - a. Monitor and remove growth around outlet as needed.
 - b. Good maintenance.

ELK SLOUGH INLET STRUCTURE Maintained by Reclamation District No. 999



View of the gate control mechanism box.



View of the discharge side into Elk Slough.

The structure is under water.

CHAPTER II

FLOOD CONTROL STRUCTURES INSPECTED ON THE SAN JOAQUIN RIVER AND TRIBUTARIES

2004

MORMON SLOUGH PUMPING PLANT NO. 1

Maintained by San Joaquin County

Condition of main pump structure.

1.

b.

C.

	a.	Good.		
2.	Condition of pumps and motors.			
	a.	Good.		
3.	Con	dition of control gates, mechanisms and flap gates.		
	a.	Good.		
4.	Con	dition of electrical equipment.		
	a.	Good.		
5.	Con	Condition of trash racks.		
	a.	Good.		
6.	Accı	umulation of trash and debris in the sump.		
	a.	None.		
7.	Vege	etation in the sump.		
	a.	None.		
8.	Com	nments:		
	a.	Good maintenance.		

Bullet holes on the front and east side of the structure.

Large hole on east side under the screen area.

MORMON SLOUGH PUMPING PLANT NO. 1 Maintained by San Joaquin County



The trash racks and the intake side of the pumping plant.



The outlet for the pumping plant, screw gate and flood wall.

MORMON SLOUGH PUMPING PLANT NO. 2

Maintained by San Joaquin County

Condition of main pump structure.

Condition of pumps and motors.

Condition of control gates, mechanisms and flap gates.

Good.

Good.

Good.

1.

2.

3.

a.

a.

a.

4.	Condition of electrical equipment.		
	a.	Good.	
5.	Con	dition of trash racks.	
	a.	Good.	
6.	Accı	umulation of trash and debris in the sump.	
	a.	None.	
7.	Vege	etation in the sump.	
	a.	None.	
8.	Com	iments:	
	a.	Good maintenance.	

MORMON SLOUGH PUMPING PLANT NO. 2 Maintained by San Joaquin County



The trash racks at the inlet side of the pumping plant.



The outlet for the pumping plant.

MORMON SLOUGH PUMPING PLANT NO. 3

Maintained by San Joaquin County

Condition of main pump structure.

Condition of pumps and motors.

Condition of control gates, mechanisms and flap gates.

Good.

Good.

1.

2.

3.

a.

a.

	a.	Good.	
4.	Condition of electrical equipment.		
	a.	Good.	
5.	Con	dition of trash racks.	
	a.	Good.	
6.	Accı	umulation of trash and debris in the sump.	
	a.	None.	
7.	Vege	etation in the sump.	
	a.	None.	
8.	Com	iments:	
	a.	Good maintenance.	

MORMON SLOUGH PUMPING PLANT NO. 3 Maintained by San Joaquin County



The trash racks and the inlet side of the pumping plant.



The outlet side for the pumping plant, screw gate and flood wall.

DUCK CREEK DIVERSION WEIR AND CONTROL STRUCTURE

Maintained by San Joaquin County

Condition of concrete control structure.

Condition of abutments and wing walls.

Good.

1.

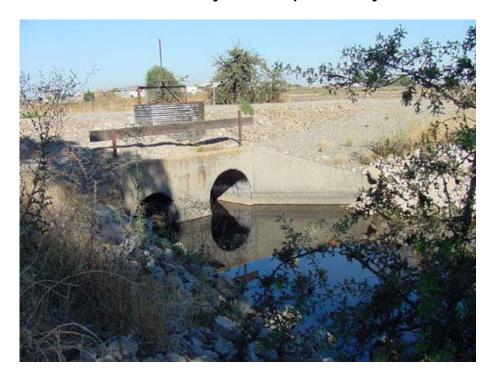
2.

a.

	a.	Good.		
3.	Condition of control gate and mechanism.			
	a.	Good.		
4.	Cond	ition of the concrete weir structure.		
	a.	Good.		
5.	Cond	ition of the revetment.		
	a.	Good.		
6.	Accu	cumulation of trash and debris around the structure or in the channel.		
	a.	Good.		
7.	Vegetation around the structure or in the channel.			
	a.	Small trees growing in the channel.		
	b.	Grass seems to be getting heavier in the channel.		
8.	Com	ments:		
	a.	Remove trees and grass.		
	b.	Good maintenance.		

DUCK CREEK DIVERSION WEIR AND CONTROL STRUCTURE

Maintained by San Joaquin County



The inlet side of the control structure.



The outlet side of the control structure.

DUCK CREEK DIVERSION WEIR AND CONTROL STRUCTURE

Maintained by San Joaquin County



Upstream at the diversion weir.



The weir, stilling basin, right bank abutment and stream gauge.

PARADISE DAM No Maintaining Agency

- 1. Condition of the concrete rubble dam section.
 - a. Good.
- 2. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 3. Vegetation around the structure and in the channel.
 - a. The willow trees along the upstream side of the structure are 12 to 15 feet tall and could alter the proper design function of the dam.
- 4. Comments:
 - a. Willow trees should be removed.
 - b. Maintenance responsibilities needs to be addressed and determined.

PARADISE DAM No Maintaining Agency



The upstream side of the dam.

Note the willow growth in front of the structure.



The downstream side of dam.

WETHERBEE LAKE PUMPING PLANT AND NAVIGATION GATE

Maintained by Reclamation District No. 2096

1.	Condition of main pump structure.		
	a.	Good.	
2.	Cond	ition of the navigation gate structure.	
	a.	Good.	
3.	Cond	ition of the abutments and wing walls.	
	a. left re	Good, but there is a $\frac{3}{4}$ inch separation in the joint between stainer wall and wing wall. It has remained stable for several years.	
4.	Cond	ition of pumps and motors.	
	a.	Good.	
5.	Cond	ition of flap gates.	
	a.	Good.	
6.	Cond	ition of electrical equipment.	
	a.	Good.	
7.	Cond	ition of the trash rack.	
	a.	Good.	
8.	Cond	ition of the gate hoist mechanism.	
	a.	Good.	
9.	Cond	ition of the revetment.	
	a.	Good.	
10.	Accu	mulation of trash and debris around the structure or in the channel.	
	a.	None.	
11.	Comr	ments:	
	a.	Good maintenance.	

WETHERBEE LAKE PUMPING PLANT AND NAVIGATION GATE

Maintained by Reclamation District No. 2096



The upstream side of the structure.



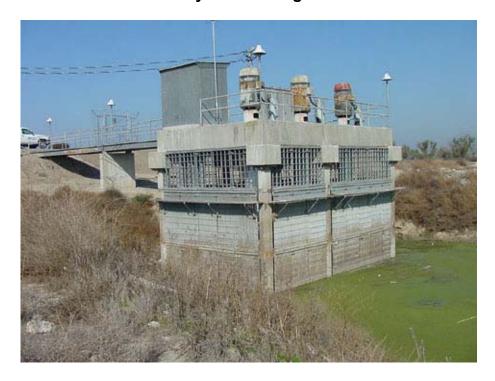
The downstream side of the structure.

GOMES LAKE PUMPING PLANT

Maintained by Turlock Irrigation District

- 1. Condition of main pump structure.
 - a. There are several large holes around the bank between the structure and the levee. The holes appear to have been caused by rain runoff and are very deep.
- 2. Condition of pumps and motors.
 - a. Good.
- 3. Condition of the switchboard house and the electrical equipment.
 - a. Good.
- 4. Condition of the control gates, mechanism and flap gates.
 - a. Good.
- 5. Condition of the trash racks.
 - a. Good.
- 6. Condition of the gauging house and equipment.
 - a. Good.
- 7. Condition of the revetment.
 - a. Good.
- 8. Accumulation of trash and debris around structure or in the channel.
 - a. Minimal.
- 9. Vegetation around the structure or in the channel.
 - a. None.
- 10. Comments:
 - a. It is unclear if the holes in the bank will have an adverse effect on the pumping facility. Monitor and repair as needed.

GOMES LAKE PUMPING PLANT Maintained by Turlock Irrigation District



The intake and pumps for the structure.



The pumping plant outlet.

GOMES LAKE PUMPING PLANT Maintained by Turlock Irrigation District



The screw gates.



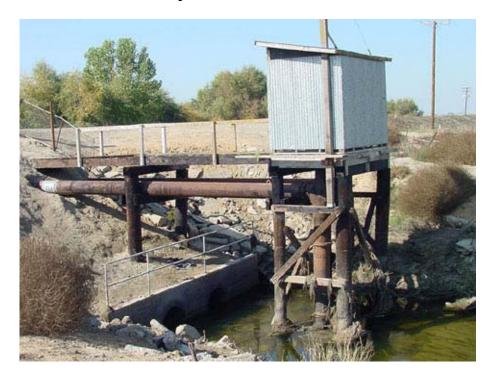
One of several large holes in the bank between the structure and the levee.

Looks like there has been some repair work, but still a problem.

RECLAMATION DISTRICT NO 2063 PUMPING PLANT (Nelson Drain) Maintained by Reclamation District No. 2063

- 1. Condition of main pump structure.
 - a. Fair.
- 2. Condition of abutments and wing walls.
 - a. Good.
- 3. Condition of pump and motor.
 - a. It is not clear if the pumps are operational. They have not been tested or run in some time.
- 4. Condition of control gate, mechanism and flap gate.
 - a. Good.
- 5. Condition of the trash racks.
 - a. The trash racks were not present at the time of the inspection.
- 6. Accumulation of trash and debris around the structure or in the channel.
 - a. Minimal.
- 7. Vegetation around the structure or in the outlet channel.
 - a. Minimal.
- 8. Comments:
 - a. The reclamation district is responsible for testing the pumps prior to flood season.
 - b. Replace the trash racks.
 - c. Monitor growth and remove as necessary.
 - d. Poor maintenance.
 - e. The district should consider replacement or reconstruction of the pump house, platform and trash racks.
 - f. Numerous bullet holes in the pump house.

RECLAMATION DISTRICT NO 2063 PUMPING PLANT (Nelson Drain) Maintained by Reclamation District No. 2063



The pumping plant intake.



The two discharge pipes.

BLACK RASCAL CREEK DROP STRUCTURE

1.	Condition of	concrete (drop	structure.
----	--------------	------------	------	------------

- a. Good.
- 2. Condition of concrete abutments.
 - a. Good.
 - b. Separation of the left bank wall is stable.
- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. A volunteer fig tree is in the channel upstream of the structure.
- 6. Comments:
 - a. Remove the fig tree.
 - b. Remove growth upstream of the structure.
 - c. Good maintenance.

BLACK RASCAL CREEK DROP STRUCTURE



The upstream side of the structure.



The downstream side of the structure.

OWENS CREEK SIPHON STRUCTURE

1. Cond	dition of co	ncrete sip	hon structure.
---------	--------------	------------	----------------

- a. Good.
- 2. Condition of concrete abutments and wing walls.
 - a. Good.
 - b. Separation of the left bank wall is stable.
- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. There is dense tule and weed growth in the channel immediately upstream and downstream of the structure.
- 6. Comments:
 - a. Remove weeds and tule growth.
 - b. Fair maintenance.

OWENS CREEK SIPHON STRUCTURE



The upstream side of the structure.



The downstream side of the structure.

ASH AND BERENDA SLOUGH CONTROL STRUCTURE

Maintained by Madera County F.C. & W.C.A.

1.	Condition of	concrete	control	structures.
----	--------------	----------	---------	-------------

- a. Good.
- 2. Condition of concrete abutments and wing walls.
 - a. Good.
- 3. Condition of stop logs and supports.
 - a. Good.
- 4. Condition of revetments.
 - a. Good.
- 5. Accumulation of trash and debris around the structures or in the channels.
 - a. None.
- 6. Vegetation around the control structures or in the channels.
 - a. Dense vegetation in the channel downstream of the structure.
- 7. Comments:
 - a. Remove the vegetation from the channel and around the structure.
 - b. Good maintenance.
 - c. Cable on top of the structure needs to be repaired.

ASH AND BERENDA SLOUGH CONTROL STRUCTURE Maintained by Madera County F.C. & W.C.A.



The upstream side of the Berenda structure.



The downstream side of the Berenda structure.

ASH AND BERENDA SLOUGH CONTROL STRUCTURE Maintained by Madera County F.C. & W.C.A.



The upstream side of the Ash structure.



The downstream side of the Ash structure.
Note the dense vegetation.

FRESNO RIVER DIVERSION WEIR

Maintained by Madera County F.C. & W.C.A.

1.	Cond	ition of concrete weir structure, stilling basin, and velocity dissipaters.
	a.	Good.
2.	Cond	ition of the diversion structure.
	a.	Good.
3.	Cond	ition of the concrete abutments and wing walls.
	a.	Good.
4.	Cond	ition of control gate and mechanisms.

Good.

a. Good.

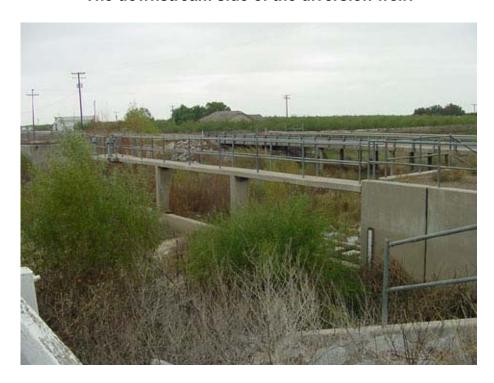
a.

- 6. Accumulation of trash and debris around the structures or in the channel.
 - a. None.
- 7. Vegetation around the structures or in the channel.
 - a. Moderate growth in channel and around the structure.
- 8. Condition of gauging house and equipment.
 - a. Good.
- 9. Comments:
 - a. Remove the growth from the structure and channel.
 - b. Fair maintenance.

FRESNO RIVER DIVERSION WEIR Maintained by Madera County F.C. & W.C.A.



The downstream side of the diversion weir.



The upstream side of the diversion weir.

BEAR CREEK FIVERSION STRUCTURE

1.	Condition of	concrete we	eir structure	and	stilling l	oasin.
----	--------------	-------------	---------------	-----	------------	--------

- a. Good.
- 2. Condition of concrete abutments and wing walls.
 - a. Good.
- 3. Condition of revetment.
 - a. Damage to both banks upstream of the structure.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. Moderate.
- 6. Comments:
 - a. Monitor and repair revetment as needed.
 - b. Remove vegetation.
 - c. Good maintenance.

BEAR CREEK FIVERSION STRUCTUREMaintained by Lower San Joaquin Levee District



The upstream side of the structure.



The downstream side of the structure.

OWENS CREEK CONTROL STRUCTURE

- 1. Condition of concrete control structure.
 - a. Good.
- 2. Condition of abutments and wing walls.
 - a. There are 2 inch cracks, four to five feet in length in the right and left bank abutments.
- 3. Condition of stop logs and supports.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. Minimal.
- 6. Comments:
 - a. This structure was in existence prior to the construction of the project and is a part of the Lower San Joaquin Levee District but is operated by Eastside Canal Company.
 - b. Monitor and repair the cracks in the abutments as needed.
 - c. Fair maintenance.
 - d. Wooden bridge crossing has new timber, replaced by L.S.J.L.D.

OWENS CREEK CONTROL STRUCTUREMaintained by Lower San Joaquin Levee District



The upstream side of the structure.



The downstream side of the structure.

OWENS CREEK CONTROL STRUCTURE Maintained by Lower San Joaquin Levee District



The 2 inch crack in the right bank abutment on the upstream side. The left bank abutment is also cracked.



North west wing also cracking.

OWENS CREEK OVERFLOW STRUCTURE

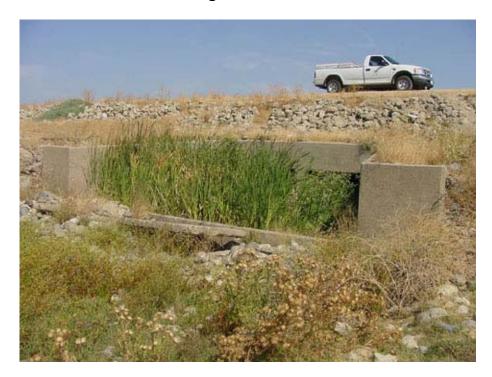
ii Goliaition of the control of overhow of actains.	1.	Condition	of the	concrete	overflow	structure.
---	----	-----------	--------	----------	----------	------------

- a. Good.
- 2. Condition of the abutments and wing walls.
 - a. Good.
- 3. Condition of the control gates and mechanism.
 - a. Good.
- 4. Condition of the revetment.
 - a. Good.
- 5. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 6. Vegetation around the structure or in the channel.
 - a. Minimal. Increase of discharge side.
- 7. Comments:
 - a. Fair maintenance.

OWENS CREEK OVERFLOW STRUCTURE Maintained by Lower San Joaquin Levee District



View of the two 72 inch slide gates at the intake side of the structure.



View of the discharge side of the structure into the Eastside Bypass.

MARIPOSA BYPASS CONTROL STRUCTURE

Maintained by Lower San Joaquin Levee District

Condition of concrete control structure.

Good.

1.

a.

2.	Condition of abutments and wing walls.			
	a.	Good.		
3.	Cond	ition of radial gate and mechanisms.		
	a.	Good.		
4.	Cond	ition of electrical equipment.		
	a.	Good.		
5.	Cond	ition of gate hoist equipment.		
	a.	Good.		
6.	Cond	ition of revetments.		
	a.	Good.		
7.	Accui	mulations of trash and debris around the structure or in the channel.		
	a.	None.		
8.	Veget	ation around the structure or in the channel.		
	a.	None.		
9.	Comr	nents:		
	a.	All the equipment is tested and serviced prior to flood season each year. This structure is well maintained and is in excellent condition.		
	b.	Good maintenance.		

MARIPOSA BYPASS CONTROL STRUCTURE



The upstream side of the structure.



The downstream side of the structure.

MARIPOSA BYPASS DROP STRUCTURE

1.	Cor	dition of concrete drop structure, stilling basin, and velocity dissipaters.
	a.	Good.
2.	Cor	dition of concrete abutments and wing walls.
	a.	Left wing wall has 3 inch separation at the joint but otherwise it is in excellent condition.

- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. None.
- 6. Comments:
 - a. Good maintenance.

MARIPOSA BYPASS DROP STRUCTURE Maintained by Lower San Joaquin Levee District



The upstream side of the structure.



The downstream side of the structure .

MARIPOSA BYPASS DROP STRUCTURE Maintained by Lower San Joaquin Levee District



View of the left bank wing wall and the 3 inch joint separation.

EASTSIDE BYPASS CONTROL STRUCTURE

1.	Condition of concrete control structure.		
	a.	Good.	
2.	Cond	ition of abutments and wing walls.	
	a.	Good.	
3.	Cond	ition of radial gate and mechanisms.	
	a.	Good.	
4.	Cond	ition of electrical equipment.	
	a.	Good.	
5.	Cond	ition of gate hoist equipment.	
	a.	Good.	
6.	Cond	ition of engine generator set.	
	a.	Good.	
7.	Cond	ition of float wells and allied equipment.	
	a.	Good.	
8.	Cond	ition of revetment.	
	a.	Good.	
9.	Accui	mulation of trash and debris around the structure or in the channel.	
	a.	None.	
10.	Veget	ation around the structure or in the channel.	
	a.	Minimal.	
11.	Comr	nents:	
	a.	All the equipment is tested and serviced prior to flood season each year. This structure is well maintained and is in excellent condition.	
	b.	Good maintenance.	

EASTSIDE BYPASS CONTROL STRUCTURE



The upstream side of the structure.



The downstream side of the structure.

SAN JOAQUIN RIVER STRUCTURE AND SAND SLOUGH STRUCTURE

Maintained by Lower San Joaquin Levee District

1.	Condition of San Joaquin River structure.		
	a. Good.		
2.	Condition of the abutments, wing walls, and bulkheads.		
	a. Good.		
3.	Condition of control gates and mechanisms.		
	a. Good.		
4.	Condition of the Sand Slough structure (Parshall flume) and wing walls.		
	a. Good.		
5.	Condition of the revetment.		
	a. Good.		
6.	Accumulation of trash or debris around structure or in the channel.		
	a None		

7. Comments:

- a. This structure is tested and serviced prior to each flood season.
- b. Good maintenance.

SAN JOAQUIN RIVER STRUCTURE AND SAND SLOUGH STRUCTURE



View of the control gates at the intake of the structure.



The outlet channel.

SAN JOAQUIN RIVER STRUCTURE AND SAND SLOUGH STRUCTURE



Upstream at the Sand Slough structure from the Washington street bridge.

FRESNO RIVER DRAINAGE STRUCTURE

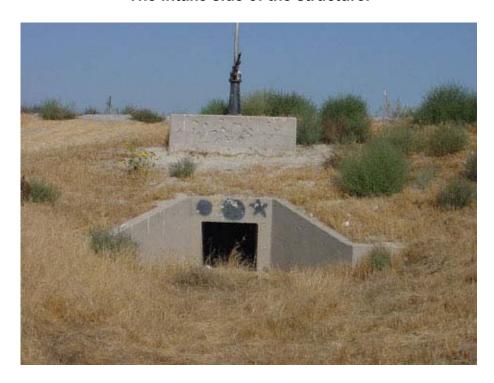
Maintained by Lower San Joaquin Levee District

1.	Cond	Condition of concrete drainage structure.		
	a.	Good.		
2.	Cond	ition of abutments and wing walls.		
	a.	Good.		
3.	Cond	ition of control gate, mechanism, and flap gate.		
	a.	Good.		
4.	Cond	ition of revetment.		
	a.	Good.		
5.	Accu	mulation of trash and debris around the structure or in the channel.		
	a.	Good.		
6.	Veget	ation around the structure or in the channel.		
	a.	None.		
7.	Comments:			
	a.	None.		

FRESNO RIVER DRAINAGE STRUCTURE Maintained by Lower San Joaquin Levee District



The intake side of the structure.



The discharge side of the structure and the control mechanism.

ASH SLOUGH DROP STRUCTURE NO. 1

1.	Cond	ition of concrete drop structure, stilling basin, and velocity dissipaters.
	a.	Good.
2.	Cond	ition of concrete abutments and wing walls.
	a.	Good.

- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. None.
- 6. Comments:
 - a. Good maintenance.

ASH SLOUGH DROP STRUCTURE NO. 1 Maintained by Lower San Joaquin Levee District



The abutments, stilling well and velocity dissipaters.

ASH SLOUGH DROP STRUCTURE NO. 2

1.	Condition of	concrete drop	structure,	stilling basin,	and velocity	dissipaters.
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- a. Good.
- 2. Condition of concrete abutments and wing walls.
 - a. Good.
- 3. Condition of revetments.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. Sand has accumulated in the stilling basin.
- 5. Vegetation around the structure or in the channel.
 - a. None.
- 6. Comments:
 - a. Good maintenance.

ASH SLOUGH DROP STRUCTURE NO. 2 Maintained by Lower San Joaquin Levee District



The downstream side of the structure. Sand is accumulating in the stilling basin.

ASH SLOUGH DROP STRUCTURE NO. 3

- 1. Condition of concrete drop structure, stilling basin and velocity dissipaters.
 - a. Good, except the velocity dissipaters are covered with sand.
- 2. Condition of concrete abutments and wing walls.
 - a. Good.
- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. None.
- 6. Comments:
 - a. This structure is in good condition but needs to have the sand removed from the stilling basin and from around the velocity dissipaters.
 - b. Fair maintenance.

ASH SLOUGH DROP STRUCTURE NO. 3 Maintained by Lower San Joaquin Levee District



The partially sand filled stilling basin.
The velocity dissipaters are covered by sand.

ASH SLOUGH DROP STRUCTURE NO. 4

- 1. Condition of concrete drop structure, stilling basin, and velocity dissipaters.
 - a. What can be seen is in good condition, but a seasonal sand dam is in place backing up water for irrigation purposes on the upstream side.
- 2. Condition of concrete abutment wing walls.
 - a. Good.
- 3. Condition of revetment.
 - a. Good.
- 4. Accumulation of trash and debris around the structure or in the channel.
 - a. None.
- 5. Vegetation around the structure or in the channel.
 - a. Bamboo growing along right wing wall.
- 6. Comments:
 - a. The seasonal sand dam on the upstream side is for irrigation purposes and can be easily breached or washed out in the event of high water.
 - b. Remove bamboo.

ASH SLOUGH DROP STRUCTURE NO. 4 Maintained by Lower San Joaquin Levee District



The downstream side of the drop structure and the seasonal sand dam.

EASTSIDE BYPASS DROP STRUCTURE NO. 1

Maintained by Lower San Joaquin Levee District

Condition of concrete drop structure, stilling basin and velocity dissipaters.

1.

	a.	Good.
2.	Cond	dition of concrete abutments and wing walls.
	a.	Good.
3.	Cond	dition of revetment.
	a.	Good.
4.	Accu	imulation of trash and debris around the structure or in the channel.
	a.	None.
5.	Vege	tation around the structure or in the channel.
	a.	None.
6.	Com	ments:
	a.	Good maintenance.

EASTSIDE BYPASS DROP STRUCTURE NO. 1 Maintained by Lower San Joaquin Levee District



Overview of the stilling basin and the velocity dissipaters.



Top view of the stilling basin and the velocity dissipaters.

EASTSIDE BYPASS DROP STRUCTURE NO. 2

Maintained by Lower San Joaquin Levee District

1.	Cond	ondition of concrete structure, stilling basin, and velocity dissipaters.		
	a.	Good.		
2.	Cond	dition of concrete abutments and wing walls.		
	a.	Good.		
3.	Cond	dition of revetment.		
	a.	Good.		
4.	Accı	imulation of trash and debris around the structure or in the channel.		
	a.	Minimal.		
5.	Vege	etation and debris around the structure or in the channel.		

a.

a. Good maintenance.

None.

EASTSIDE BYPASS DROP STRUCTURE NO. 2 Maintained by Lower San Joaquin Levee District



Overview of the stilling basin and the velocity dissipaters.



Top view of the stilling basin and the velocity dissipaters.

SAN JOAQUIN RIVER AND CHOWCHILLA CANAL BYPASS CONTROL STRUCTURE

1.	Condition of the San Joaquin River Control Structure.		
	a.	Good.	
2.	Condition of the Chowchilla Canal Bypass Structure.		
	a.	Good.	
3.	Condition of the abutments and wing walls.		
	a.	Good.	
4.	Condition of the radial gates and mechanisms.		
	a.	Good.	
5.	Cond	lition of the gate hoist equipment.	
	a.	Good.	
6.	Cond	lition of the engine generator set.	
	a.	Good.	
7.	7. Condition of the float wells and equipment.		
	a.	Good.	
8.	8. Accumulation of trash and debris around the structures or in t		
	a.	None.	
9.	Vegetation around the structures or in the channel.		
	a.	Minimal.	
10. Comme		ments:	
	a.	All the equipment is tested and serviced prior to flood season each year. This structure is well maintained and is in excellent condition.	
	b.	Good maintenance.	

SAN JOAQUIN RIVER AND CHOWCHILLA CANAL BYPASS CONTROL STRUCTURE

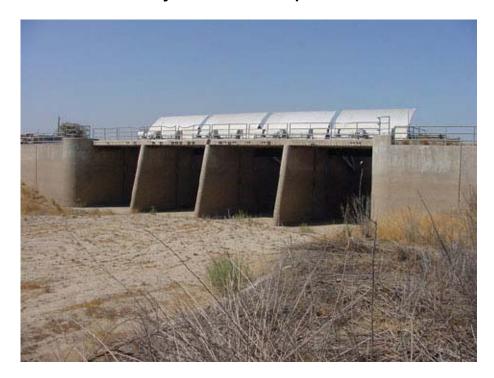


The upstream side of the San Joaquin river structure.



The downstream at the San Joaquin river structure.

SAN JOAQUIN RIVER AND CHOWCHILLA CANAL BYPASS CONTROL STRUCTURE



The upstream side of the Chowchilla Canal bypass structure.



The downstream side of the structure into the Chowchilla Canal bypass.

GLOBAL POSITIONING (GPS)

	GPS
SITE	(WGS 84)
	N 38º 35.076'
AMERICAN RIVER PUMPING PLANT NO.1 HOWE AVENUE STORM DRAIN D - 05	W 121º 25.285'
	N 38º 34.198'
AMERICAN RIVER PUMPING PLANT NO.1 WILLHAGGIN STORM DRAIN D - 43	W 121º 22.500'
	N 37º 09.519'
ASH AND BERENDA SLOUGH CONTROL STRUCTURES	W 120° 07.470′
ASU SI QUEU DDOD STRUCTURE NO. 4	N 37º 02.042' W 120º 26.518'
ASH SLOUGH DROP STRUCTURE NO. 1	N 37º 02.275'
ASH SLOUGH DROP STRUCTURE NO. 2	W 120° 26.422'
AOT GEOGRI BROT GTROGTORE NO. 2	N 37º 02.576'
ASH SLOUGH DROP STRUCTURE NO. 3	W 120° 26.191'
	N 37º 02.726'
ASH SLOUGH DROP STRUCTURE NO. 4	W 120º 25.796'
	N 37º 15.292'
BEAR CREEK DIVERSION STRUCTURE	W 120º 43.096'
	N 39º 45.710'
BIG CHICO CREEK DIVERSION STRUCTURE	W 121º 47.555'
DI AOK DAGGAL ODEEK DOOD GEDLIGELIDE	N 37º 18.886'
BLACK RASCAL CREEK DROP STRUCTURE	W 120° 23.781′ N 39° 11.826′
BUTTE SLOUGH DRAINAGE STRUCTURE	W 121º 56.614'
BOTTE SECOGIT BRAINAGE STRUCTURE	N 39º 11.724'
BUTTE SLOUGH OUTFALL STRUCTURE	W 121º 56.177'
	N 38º 40.953'
CACHE CREEK SETTING BASIN WEIR AND DRAINAGE STRUCTURE	W 121º 40.375'
	N 39º 10.623'
CLOVER CREEK DIVERSION STRUCTURE	W 122º 53.925'
	N 37º 56.303'
DUCK CREEK DIVERSION WEIR AND CONTROL STRUCTURE	W 120° 59.408'
FACTOIDE DYDAGO CONTROL CTRUCTURE	N 37º 12.263'
EASTSIDE BYPASS CONTROL STRUCTURE	W 120° 41.850′ N 36° 58.566′
EASTSIDE BYPASS DROP STRUCTURE NO. 1	W 120° 22.924'
EASTSIDE BIT ASS BROT STRUCTURE NO. 1	N 36º 58.583'
EASTSIDE BYPASS DROP STRUCTURE NO. 2	W 120* 22.492'
	N 38º 24.843'
ELK SLOUGH INLET STRUCTURE	W 121º 31.379'
	N 38º 45.540'
FREMONT WEIR	W 121º 39.927'
	N 36° 58.115'
FRESNO RIVER DIVERSION WEIR	W 120º 15.330'
EDESNO DIVED DRAINAGE STRUCTURE	N 36° 58.710'
FRESNO RIVER DRAINAGE STRUCTURE	W 120° 22.112' N 37° 28.894'
GOMES LAKE PUMPING PLANT	W 121º 02.797'
COMES EXILE I OMI INO I EMIT	N 39° 07.579'
HIGHLAND CANAL DIVERSION WEIR AND DRAINAGE STRUCTURE	W 122º 52.964'
	02.007

GLOBAL POSITIONING (GPS)

	GPS
SITE	(WGS 84)
	N 38º 01.580'
KNIGHTS LANDING OUTFALL STRUCTURE	W 121º 43.511'
LINDO CHANNEL CONTROL CTRUCTURE	N 39° 45.678′
LINDO CHANNEL CONTROL STRUCTURE	W 121° 47.827' N 39° 45.722'
LINDO CHANNEL DIVERSION WEIR	W 121º 47.837'
LINDO CHANNEL DIVERSION WEIK	N 39º 44.014'
LITTLE CHICO CREEK CONTROL AND WEIR STRUCTURES	W 121º 46.309'
	N 38º 38.448'
MAGPIE CREEK PUMPING PLANT	W 121º 22.263'
	N 37º 12.101'
MARIPOSA BYPASS CONTROL STRUCTURE	W 120º 41.696'
	N 37º 12.159'
MARIPOSA BYPASS DROP STRUCTURE	W 120º 45.314'
	N 39° 08.538'
MIDDLE CREEK PUMPING PLANT	W 122º 54.141'
MODMON SI QUICU DUMBING DI ANT NO. 4	N 37º 59.378' W 121º 16.016'
MORMON SLOUGH PUMPING PLANT NO. 1	N 37º 58.939'
MORMON SLOUGH PUMPING PLANT NO. 2	W 121º 14.966'
INIONION SLOUGH FUMFING FLANT NO. 2	N 37º 58.439'
MORMON SLOUGH PUMPING PLANT NO. 3	W 121º 13.798'
	N 39º 20.299'
MOULTON WEIR	W 122º 01.326'
	N 38º 53.665'
NELSON BEND	W 121º 37.101'
NORTH FORK FEATHER RIVER DIVERSION CHANNEL DROP STRUCTURE DROP	N 40° 28.202'
STRUCTURE NO. 3 THROUGH 7	W 121º 25.120'
NORTH FORK FEATHER RIVER DIVERSION CHANNEL DROP STRUCTURE DROP	N 40º 29.864'
STRUCTURE NO.1	W 121º 26.123'
NORTH FORK FEATURE DIVER DIVERSION CTRUCTURE	N 40° 30.292'
NORTH FORK FEATHER RIVER DIVERSION STRUCTURE	W 121º 26.193' N 37º 13.190'
OWENS CREEK CONTROL STRUCTURE	W 120º 41.891'
OWENS CREEK CONTROL STRUCTURE	N 37º 12.350'
OWENS CREEK OVERFLOW STRUCTURE	W 120º 41.808'
	N 37º 15.771'
OWENS CREEK SIPHON STRUCTURE	W 120º 17.281'
	N 37º 45.633'
PARADISE DAM	W 121º 18.565'
	N 37º 23.867'
RECLAMATION DISTRICT NO. 2063 PUMPING PLANT (Nelson Drain)	W 120° 58.346'
	N 38° 36.319'
SACRAMENTO WEIR	W 121º 33.489'
SAN IOAGUIN DIVED AND CHOWCHILLA CANAL DVDASS CONTROL STRUCTURE	N 36° 46.439'
SAN JOAQUIN RIVER AND CHOWCHILLA CANAL BYPASS CONTROL STRUCTURE	W 120° 17.044' N 37° 06.745'
SAN JOAQUIN RIVER STRUCTURE AND SAND SLOUGH STRUCTURE	W 120° 35.358'
SAIN JOAKUIN RIVER STRUCTURE AND SAIND SLOUGH STRUCTURE	vv 120° 33.338

GLOBAL POSITIONING (GPS)

	GPS
SITE	(WGS 84)
	N 38° 55.914'
SUTTER BYPASS PUMPING PLANT NO. 1	W 121* 38.064'
	N 38° 01.580'
SUTTER BYPASS PUMPING PLANT NO. 2	W 121º 43.624'
	N 39° 07.202'
SUTTER BYPASS PUMPING PLANT NO. 3	W 121º 46.764'
	N 39º 06.164'
SUTTER BYPASS WEIR NO. 2	W 121º 45.522'
	N 39º 01.619'
TISDALE WEIR	W 121º 49.918'
	N 39º 09.206'
WADSWORTH CANAL WEIR NO. 4	W 121º 44.076'